

Interview Summary

Application No.

10/669,520

Applicant(s)

SATO ET AL.

Examiner

Yewebdar T. Tadesse

Art Unit

1734

All participants (applicant, applicant's representative, PTO personnel):

(1) Yewebdar T. Tadesse.

(3) _____.

(2) James Finder.

(4) _____.

Date of Interview: 15 May 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference

c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.

If Yes, brief description: _____.

Claim(s) discussed: 4,9,55 and 61.

Identification of prior art discussed: none.

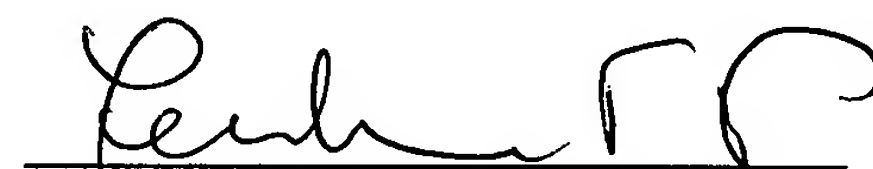
Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.



Examiner's signature, if required

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: attorney argued that the claimed combination of the substrate processing apparatus with the substrate having a notch at a periphery edge of the substrate is distinguished over the applied prior arts. It is agreed that the substrate having a notch at periphery edge is taught in Mito et al. Attorney intended to replace the incorrectly claimed dimension "diameter" of the blocking member and the substrate with a "radius". It is confirmed that new IDS are submitted on 03/20/2007. Applicants noted that a formal response will shortly be filed incorporating the proposed amendment distinguished over the cited arts (see proposed amendment faxed on 04/30/2007)

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FACSIMILE TRANSMITTAL SHEETDATE: April 30, 2007NUMBER OF PAGES, INCLUDING COVER: 8

TO:

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Examiner Tadesse USPTO Art Unit: 1734	571 273 1238	<input type="checkbox"/> SUCCESSFULLY FAXED
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FROM: James A. FinderOFGS FILE NO.: P/4178-9RETURN TO: Lisa Fiumara**IF YOU DID NOT RECEIVE ALL THE PAGES, PLEASE PHONE (212) 382-0700 AS SOON AS POSSIBLE.**

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MESSAGE: U.S. Serial No.: 10/669,520

Attached hereto are the following documents:

1. Agenda for Telephone Interview
2. Certificate of Facsimile

P/4178-9

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Confirmation No.: 4349

Masanobu SATO et al.

Date: April 30, 2007

Serial No.: 10/669,520

Group Art Unit: 1734

Filed: September 24, 2003

Examiner: Yewebdar T. TADESSE

For: SUBSTRATE PROCESSING APPARATUS AND SUBSTRATE PROCESSING
SYSTEM

VIA FACSIMILE 571 273 1238

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

AGENDA FOR TELEPHONE INTERVIEW

Sir:

A telephone interview has been scheduled for 1:30 pm on May 15, 2007. Following are suggested subjects for discussion.

PENDING CLAIMS FOR DISCUSSION

Without waiving patentability of any aspect of the disclosed invention, it is suggested that the telephone interview should focus on the following claims:

Claim 4 (Currently Amended)

A substrate processing apparatus wherein a processing liquid is supplied to one major surface of a substrate and one major surface is subjected to predetermined substrate processing, comprising:

an atmosphere blocking member which is faced with other major surface of said substrate and that is away from said substrate; and

a gas supplying unit which supplies an atmosphere gas to a space which is created between said atmosphere blocking member and said substrate,

wherein a substrate-facing surface of said atmosphere blocking member which is faced with

the other major surface of said substrate becomes closer to said substrate with a distance toward a periphery edge of said atmosphere blocking member,

a central area of said substrate-facing surface which is faced with an approximately central portion of said substrate is a flat surface, and a periphery edge area of said substrate-facing surface which is faced with a periphery edge of said substrate is an angled surface which becomes closer to said substrate with a distance toward a periphery edge of said substrate-facing surface, and

said atmosphere blocking member has a radius diameter which is smaller than a diameter of said

substrate by a width of a notch at a periphery edge of said substrate.

further comprising at least three or more support members which are disposed at the periphery edge of said atmosphere blocking member, abut on an edge surface of said substrate and accordingly support said substrate.

Claim 57 (Previously Presented)

The substrate processing apparatus of claim 4, further comprising a substrate supported on said support members and having a notch at a periphery edge of said substrate.

Claim 9 (Currently Amended)

A substrate processing apparatus wherein a processing liquid is supplied to one major surface of a substrate and one major surface is subjected to predetermined substrate processing, comprising:

an atmosphere blocking member which is faced with other major surface of said substrate and that is away from said substrate; and

a gas supplying unit which supplies an atmosphere gas to a space which is created between said atmosphere blocking member and said substrate,

wherein a substrate-facing surface of said atmosphere blocking member which is faced with the other major surface of said substrate becomes closer to the other major surface of said substrate with a distance toward a periphery edge of said atmosphere blocking member,

said atmosphere blocking member has a radius diameter which is smaller than a diameter of said substrate by a width of a notch at a periphery edge of said substrate, and

said substrate processing apparatus further comprises three or more support members which are disposed at the periphery edge of said atmosphere blocking member, abut on an edge surface of said substrate and accordingly support said substrate.

Claim 58 (Previously Presented)

A substrate processing apparatus of claim 9, further comprising a substrate supported on said support members and having a notch at a periphery edge of said substrate.

Claim 55 (Currently Amended)

A substrate processing apparatus wherein a processing liquid is supplied to one major surface of a substrate and one major surface is subjected to predetermined substrate processing, comprising:

a processing liquid supply nozzle which supplies said processing liquid only to one major surface of said substrate;

an atmosphere blocking member which has a shape of a disk and which is faced with other major surface of said substrate and that is away from said substrate; and

a gas supplying unit which supplies an atmosphere gas to a space which is created between said atmosphere blocking member and said substrate,

wherein a substrate-facing surface of said atmosphere blocking member which is faced with the other major surface of said substrate becomes closer to said substrate with a distance toward a periphery edge of said atmosphere blocking member over the entire circumference of said atmosphere blocking member, and

said atmosphere blocking member has a radius ~~diameter~~ which is smaller than a diameter of said substrate by a width of a notch at a periphery edge of said substrate.

Claim 56 (Previously Presented)

A substrate processing apparatus of claim 55, further comprising a substrate, said substrate having a notch at a periphery edge thereof.

PROPOSED NEW CLAIMS**Claim 59 (New)**

The combination of claim ____, whereby the atmosphere blocking member prevents a mist from passing through said notch from said one major surface of said substrate, to said other major surface of said substrate.

Claim 60 (New)

The combination of claim ____, wherein said atmosphere blocking member and said notched substrate cooperate to prevent a mist generated by liquid processing of said one major surface of said substrate, from passing through said notch and reaching said other major surface of said substrate.

Claim 61 (New)

In combination, a substrate processing apparatus and a substrate, wherein a processing liquid is supplied to one major surface of a substrate for a predetermined substrate processing, comprising:

three or more support members disposed in said processing apparatus, which abut a peripheral edge of said substrate and accordingly support said substrate;

said substrate having a notch at said peripheral edge of said substrate;

an atmosphere blocking member which faces another major surface of said substrate and is spaced away from said substrate;

said atmosphere blocking member having a radius which is smaller than a diameter of said substrate by a radial width of said notch at said peripheral edge of said substrate;

wherein a substrate-facing surface of said atmosphere blocking member which faces the other major surface of said substrate becomes closer to the other major surface of said substrate with a distance toward said peripheral edge of said atmosphere blocking member;

said three or more support members being disposed at a peripheral edge of said atmosphere blocking member; and

a gas supplying unit which supplies an atmosphere gas to a space which is created between said atmosphere blocking member and said substrate.

DISCUSSION

Claims 56 and 57 have been rejected as anticipated by JP10-116805. Claim 58 has been rejected as obvious over JP'805 in view of Wen.

Claims 56-58 each recite a physical combination of two structures:

- a processing apparatus for processing a substrate with a liquid, the apparatus having an atmosphere blocking member which has a specific size relationship with the substrate and particularly with respect to a notch therein; and
- a substrate held in the processing apparatus, the substrate having said notch at a peripheral edge thereof; and
- in claims 57 and 58, the substrate being supported on support members in the processing apparatus.

More particularly, independent claims 4, 9 and 55 recite that "said atmosphere blocking member has a diameter which is smaller than a diameter of a substrate by a width of a notch at a periphery edge of the substrate". Claims 56-58 depend from the independent claims and recite a substrate having a peripheral notch, in combination with the claimed processing apparatus. See page 25, lines 8-15. The invention described in JP '805 (JP10-116805) does not have these features. The substrate in JP '805 does not have a notch; and therefore, obviously, the processing apparatus in JP '805 cannot have the recited interaction (size relationship) with the notch of a substrate.

By adopting these structures, the following advantageous effects, which are never suggested in the cited reference, can be achieved in the present invention. Specifically, since the atmosphere blocking member has a diameter which is smaller than the diameter of the substrate by the width of

the notch at the peripheral edge of the substrate, the peripheral edge area of the atmosphere blocking member is not exposed to a mist-splashed atmosphere around the substrate through the notch at the peripheral edge of the substrate. Consequently, the mist created during the substrate processing can be prevented from being kicked back by the peripheral edge of the atmosphere blocking member and toward the other major surface of the substrate.

Proposed new claims 59-61 recite this advantageous cooperation of the atmosphere blocking member and the substrate.

Thus, according to the claimed invention, since the atmosphere blocking member has a diameter that is smaller than the diameter of the substrate by the width of the notch at the peripheral edge of the substrate, the mist created during the substrate processing can be securely prevented from reaching and adhering to the other major surface of the substrate.

There is no description or even suggestion in JP '805 regarding a substrate having a notch in its edge, nor an apparatus wherein an atmosphere blocking member has a diameter which is smaller than the diameter of a substrate by the width of any notch at the peripheral edge of any substrate.

Wen (U.S. Patent No. 6,239,038) merely discloses beveled fingers (42) which adjustably support a substrate depending on a size of the substrate. It neither describes nor suggests an apparatus wherein an atmosphere blocking member has a diameter that is smaller than the diameter of a substrate by the width of any notch at a peripheral edge of any substrate.

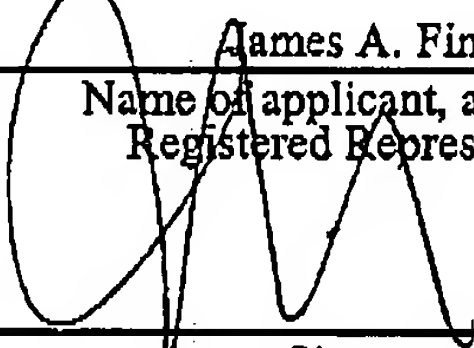
Therefore, the claimed structure, combining the processing apparatus, the atmosphere blocking member and the notched substrate, is neither anticipated nor suggested by the cited references.

The Examiner made reference to Ex Parte Thibault, 164 U.S. P.Q. 666 (Bd. App. 1969); In re Young, 25 U.S.P.Q. 69 (CCPA 1935); and In re Otto, 136 U.S.P.Q. 458 (CCPA 1963). These cases dealt with claims to processing equipment that also recited a workpiece or a material worked upon. The court in each case observed that the claimed processing equipment was anticipated or obvious in view of the prior art processing equipment, and the recitation of a specific workpiece or material was merely a statement of intended use, since the workpiece or material did not require any additional features that were not already in the prior art processing equipment.

These cases are inapplicable to the present claims, which recite a workpiece having a specific shape, physically combined with a processing apparatus also having a specific shape. The claimed combination of shaped structures is not seen in the prior art of record.

The Examiner also referred to Ex Parte Masham, 2 U.S.P.Q. 2d 1647 (B.P.A.I. 1987), which on its face is applicable to the present case. As quoted by the Examiner, the Masham case dealt with a claim that merely "recited the manner in which a claimed apparatus is to be employed," in an application where "the prior art apparatus shows all of the structural limitations of the claim." In the present case, in contrast, the claims do not merely recite a manner of use, but recite specific structures for the claimed elements; and further, the prior art does not show all the structural limitations of the claims.

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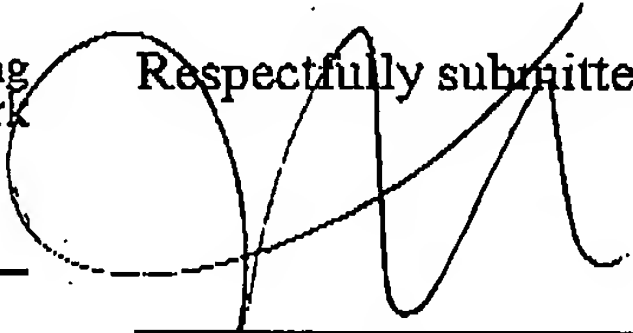


Name of applicant, assignee or
Registered Representative

Signature

April 30, 2007
Date of Signature

Respectfully submitted,



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